WHAT IS CLAIMED IS:

1. A method for the cryopreservation of sperm comprising:

(a) obtaining a selected sperm sample;

(b) cooling said selected sperm sample;

(c) isolating sperm from said selected sperm sample to produce isolated sperm;

(d) adding final extender to said isolated sperm to produce a suspension of sperm; and

(e) freezing said suspension of sperm.

2. The method of Claim 1 wherein said selected sperm sample comprises a portion of the sperm present in a source sample, said portion of sperm selected for a characteristic, and wherein the sperm concentration in the selected sperm sample is lower than in the source sample.

3. The method of Claim 1 wherein said selected sperm sample comprises sex-selected sperm.

4. The method of Claim 1 wherein said selected sperm sample comprises mammalian sperm.

5. The method of Claim 4 wherein said selected sperm sample comprises bovine sperm.

6. The method of Claim 4 wherein said selected sperm sample comprises equine sperm.

7. The method of Claim 4 wherein said selected sperm sample comprises porcine sperm.

8. The method of Claim 1 wherein said selected sperm sample comprises sperm selected by a method from the group consisting of flow cytometry, a magnetic technique, a columnar technique, a gravimetric technique, a biochemical technique, a technique based on

motility of sperm, a technique based on an electrical property of sperm, and any combination thereof.

9. The method of Claim 8 wherein said sperm have been selected by flow cytometry.

10. The method of Claim 1 wherein cooling is carried out by reducing the temperature of the selected sperm sample to about 5°Celsius.

11. The method of Claim 10 wherein cooling is carried out over a period of about 60 minutes to about 240 minutes.

12. The method of Claim 1 wherein the final extender added to said selected sperm sample each comprise, in addition to a cryoprotectant, one or more of the following components: a component that maintains osmolality and buffers pH, an organic substance that reduces cold shock and preserves fertility of sperm, an energy source, a substance that facilitates sperm capacitation, and an antibiotic.

13. The method of Claim 12 wherein said cryoprotectant is selected from the group consisting of disaccharides, trisaccharides, and any combination thereof.

14. The method of Claim 12 wherein said cryoprotectant is selected from the group consisting of glycerol, dimethyl sulfoxide, ethylene glycol, propylene glycol, and any combination thereof.

15. The method of Claim 12 wherein said component that maintains osmolality and buffers pH is selected from the group consisting of a buffer comprising a salt, a buffer containing a carbohydrate, and any combination thereof.

16. The method of Claim 12 wherein said component that maintains osmolality and buffers pH is selected from the group consisting of sodium citrate, Tris[hydroxymethyl]aminomethane,

N-Tris[hydroxymethyl]methyl-2-aminoethanesulfonic acid, monosodium glutamate, milk, HEPES buffered medium, and any combination thereof.

17. The method of Claim 12 wherein said organic substance is selected from the group consisting of egg yolk, an egg yolk extract, milk, a milk extract, casein, albumin, lecithin, and any combination thereof.

18. The method of Claim 12 wherein said energy source is a monosaccharide selected from the group consisting of glucose, fructose, mannose, and any combination thereof.

19. The method of Claim 12 wherein said antibiotic is selected from the group consisting of tylosin, gentamicin, lincomycin, linco-spectin, spectinomycin, penicillin, streptomycin, and any combination thereof.

20. The method of Claim 1 wherein, after the addition of the final extender, the sperm sample and suspension of sperm, respectively, comprise glycerol, sodium citrate, Tris[hydroxymethyl]aminomethane, egg yolk, fructose, and one or more antibiotics.

21. The method of Claim 1 wherein, after the addition of the final extender, said sperm sample and suspension of sperm, each comprise glycerol, sodium citrate, egg yolk, and one or more antibiotics.

22. The method of Claim 1 wherein, after the addition of the final extender, said sperm sample and suspension of sperm, each comprise glycerol, egg yolk, milk, fructose, and one or more antibiotics.

23. The method of Claim 1 wherein said extender has a pH in the range of about 6.5 to about 7.5.

24. The method of Claim 1 wherein the sperm are isolated from said selected sperm sample by centrifugation.

25. The method of Claim 24 wherein said centrifugation allows for at least about 50% to about 90% recovery of sperm.

26. The method of Claim 1 wherein the concentration of sperm in said suspension prior to freezing is about 1 x 10^6/ml to about 300 x 10^6/ml.

27. A frozen selected sperm sample comprising a portion of the sperm present in a source sample, said portion of sperm selected for a characteristic.

28. The frozen selected sperm sample of Claim 27 wherein said frozen selected sperm sample comprises sex-selected sperm.

29. The frozen selected sperm sample of Claim 27 wherein said frozen selected sperm sample comprises mammalian sperm.

30. The frozen selected sperm sample of Claim 29 wherein said frozen selected sperm sample comprises bovine sperm.

31. The frozen selected sperm sample of Claim 29 wherein said frozen selected sperm sample comprises equine sperm.

32. The frozen selected sperm sample of Claim 29 wherein said frozen selected sperm sample comprises porcine sperm.

33. The frozen selected sperm sample of Claim 27 wherein the method used to select said selected sperm sample comprises a technique from the group consisting of flow cytometry, a magnetic technique, a columnar technique, a gravimetric technique, a biochemical technique, a technique based on motility of sperm, a technique based on an electrical property of sperm, and any combination thereof.

34. The frozen selected sperm sample of Claim 33 wherein said frozen selected sperm sample comprises sperm that have been selected by flow cytometry.

35. The frozen selected sperm sample of Claim 27 wherein said frozen selected sperm sample is produced by a method comprising:

(a) obtaining a selected sperm sample;

(b) cooling said selected sperm sample;

(c) isolating sperm from said selected sperm sample to produce isolated sperm;

(d) adding final extender to said isolated sperm to produce a suspension of sperm; and

(e) freezing said suspension of sperm.

36. A method comprising using the frozen selected sperm sample of Claim 27 for artificial insemination or in vitro fertilization.

37. The method of Claim 36 comprising using said frozen selected sperm sample for low-dose artificial insemination.

add A1

add B2